

REMARKS

In the Office Action dated June 22, 2010, claims 1-4, 6-9, 11-31, 33-47, and 49, 50, and 52 were examined with the result that all claims were rejected. Claim 51 currently is withdrawn from examination. In view of the following remarks, reconsideration of this application is requested.

I. Claim Rejections §102(b) and/or §103(a) over Dickinson and Romenesko

The Examiner rejects claims 1-4, 6-9, 11-31, 33-47, 49, 50, and 52 under 35 U.S.C. § 102 (b) as anticipated by, or in the alternative under 35 U.S.C. § 103 (a) as obvious over Dickinson, EP 0559382 A1 (hereinafter “Dickinson”), either alone or further in view of Romenesko, U.S. Patent No. 6,433,049 (hereinafter “Romenesko”). The Applicants respectfully traverse the rejections in view of the following remarks.

A. Patentability of Claims 1-4, 6-9, 11-31, 33-47, 49, 50, and 52

Dickinson describes a fire retardant communications cable comprising a fire retardant material composed of:

- about 10 to 50% by weight of a polymeric base material;
- about 5 to 60% of an additive system exclusive of inorganic oxide constituents; and
- about 5 to 40% of the inorganic oxide constituents.

(See Dickinson, col. 8, lines 16-20). As such, Dickinson discloses a material which may comprise a broad range of “polymeric base material,” a broad range of “an additive system,” and a broad range of “inorganic oxide constituents.”

According to Dickinson, the “additive system” includes “inorganic oxide constituents” such as a mixture of:

- a first inorganic oxide constituent with a melting point of at least 350°C, including phosphate glasses (see Dickinson col.5, lines 30-31), and
- a second inorganic oxide constituent which begins to crystallize at about 650°C, such as a ceramic fiber and/or a basalt fiber (*e.g.*, a polycrystalline mullite fiber) (see Dickinson col.5, lines 56-57).

In addition to the first and second inorganic constituents, the additive system also may include mica. (*See* Dickinson, col. 6, lines 33-34).

However, Dickinson does not disclose that the fluxing oxide is present in an amount from 1 to 15% by weight of the residue after exposure to an elevated temperature experienced under fire conditions. As indicated in the present Specification, this limitation of 15% by weight advantageously enables formation of a coherent ceramic product on exposure to elevated temperature encountered in a fire, so that shrinkage is minimized. (*See* Specification, page 19, lines 17-20).

The present invention is concerned with providing a composition which in the heat of a fire turns to a coherent ceramic which has the strength to provide a barrier for insulation of the functional element of cables or other structures against the fire, such as door seals or window seals. The ceramic formed is relatively strong and dimensionally stable. Dimensional stability is important to avoid the strains produced by shrinkage or uncontrolled expansion which may severely weaken the insulation or expose the material or opening which needs to be insulated.

The use of the controlled amount of fluxing oxide (*i.e.*, 1-15% by weight of residue as recited in the present claims) enables the filler to be formed into a coherent ceramic by virtue of the adhesion provided by fluxing oxide. This concept is discussed in the present Specification and is not taught or suggested by Dickinson or Romenesko. In addition, the use of the controlled amount of fluxing oxide avoids fusion and serious loss of shape which

occurs if too much fluxing oxide is present, which provides a liquid vehicle causing loss of the ceramic barrier at high temperature.

In addition, Dickinson does not disclose that the fire retardant material comprises a specific amount of the silicate mineral filler. In particular, Dickinson does not disclose that the fire retardant material comprises at least 15% by weight of silicate mineral filter based on the total weight of the composition. Indeed, Dickinson only discloses that the fire retardant material includes 5 to 60% by weight of the inorganic constituents, this amount being the total amount of the mixture including the first inorganic oxide constituent, the second inorganic oxide constituent, and optionally mica. Moreover, no specific amount of mica in the fire retardant material is disclosed in Dickinson.

As the Examiner will appreciate,

III. REBUTTAL OF *PRIMA FACIE* CASE OF OBVIOUSNESS

Applicants can rebut a *prima facie* case of obviousness based on overlapping ranges by showing the criticality of the claimed range. "The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . In such a situation, the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). See MPEP § 716.02 - § 716.02(g) for a discussion of criticality and unexpected results.

(See MPEP, page 2100-152). In Examples, the present Specification discloses the importance of the silicate mineral filler and the fluxing oxide and demonstrates the criticality of the proportions of these components for minimizing shrinkage and maximizing flexural strength. (See Specification, page 28, line 12 to page 48, line 10; U.S. Application Publication No.

2006/0068201, paragraphs [0119]-[0162]). The present Specification also teaches the critical nature of the proportions of the components to prevent molten conductive pathways which can, of course, produce failure of electric cables. (See Specification, page 17, line 16; U.S. Application Publication No. 2006/0068201, paragraph [0062]). Further, although the previously presented Declaration of Don Rodrigo is drawn to a comparison of the present claimed invention to the disclosure of Romenesko, the Declaration of Don Rodrigo still clearly shows the critical nature of the fluxing oxide and its proportion by weight of non-combustible material for minimizing shrinkage and maximizing flexural strength.

Dickinson includes no Examples or disclosure that teaches or suggests the importance of silicate mineral filler and fluxing oxide and the criticality of the proportions of these components for minimizing shrinkage and maximizing flexural strength. Therefore, Dickinson does not anticipate or render obvious the present claims. Furthermore, one skilled in the art would have to exercise undue experimentation based on the teaching of Dickinson in order to achieve the Applicants' claimed composition. The Examiner is asked to the review the Examples of the present Specification in this regard.

The criticality of the nature of the components of the present claims is not recognized by Dickinson, let alone the proportion of those components. For these reasons, the rejections should be reconsidered and withdrawn.

B. Patentability of Claims 21-23, 25, 26, 46, and 52

Claims 21-23, 25, 26, 46, and 52 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson in view of Romenesko. The Applicants respectfully traverse the rejection.

For the same reasons laid out above, claims 21-23, 25, 26, 46, and 52 are patentable over Dickinson in view Romenesko. It would not have been obvious to one having skill in the art to modify Dickinson in light of Romenesko because Dickinson does not disclose the criticality of the nature of the components of the present claims, in particular the silicate mineral filler and fluxing oxide, whose proportion and nature are critical to achieving

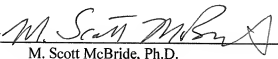
dimensional stability and strength. Romenesko does not remedy the deficiencies of Dickinson with respect to teaching or suggesting the importance of silicate mineral filler and fluxing oxide and the criticality of the proportions of these components for minimizing shrinkage and maximizing flexural strength.

For these reasons, the rejections should be reconsidered and withdrawn.

II. Conclusion

An effort has been made to place this application in condition for allowance and such action is earnestly requested. The Examiner is invited to contact the Applicants' representative if doing so will further prosecution of the application.

Respectfully submitted,
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